

### Amendments to the Claims

1. (currently amended) A sample cell comprising a glass body including a gas inlet, and a gas outlet and at least one orifice formed by a tubular portion of the glass body; [-, wherein-] and a plane glass window [is inserted into] closing the orifice, [-] the shape and size of the window corresponds corresponding to the shape and size of the orifice, [-the orifice is limited by a rim, - the rim is wider than the thickness of the window, and - the rim of the window is fused with the rim of the orifice] the glass window being joined at its outer rim to the interior surface of the tubular portion by a fused joint, and the tubular portion projecting outwardly beyond an outer face of the glass window to accommodate an axially outer portion of the fused joint that projects outwardly beyond the outer face of the glass window.

2. (currently amended) A sample cell according to claim 1, wherein the glass body has the form of a cylinder, the plane window being is formed by a disc, and which the disc is inserted into the glass body at one end of the cylinder and spaced axially inwardly of the end of the cylinder.

3. (previously presented) A sample cell according to claim 1, wherein the sample cell comprises two plane windows which are arranged parallel to one another.

4. (currently amended) A sample cell according to claim 1, wherein the fused joint includes two projecting radii of at least one millimetre ~~are~~ formed on respective sides of the window as a result of the window being fused to the rim of the orifice, one such radii corresponding to the axially outer portion of the fused joint.

5. (previously presented) A sample cell according to claim 1, wherein the glass body is made of borosilicate glass and the window is made of borofloate glass.

6. (previously presented) A sample cell according to claim 1, wherein the wall of the glass body is at least 5 mm thick.

7. (previously presented) A sample cell according to claim 1, wherein the external diameter of the glass body is between 20 and 100 millimetres.

8. (previously presented) A polariser for polarising an inert gas, comprising the sample cell according to claim 1 wherein.

9. (currently amended) A sample cell according to claim 1, and valves connected to the gas inlet and gas outlet, the valves ~~being~~ being made from glass and including ring seals made of ethylene propylene at an entrance and exit for a gas.

10. (currently amended) A method of producing a sample cell comprising:  
inserting a plane glass window into an orifice of a glass body that further has an inlet and an outlet, the circumference of the window corresponding to the circumference of the orifice and ~~the the orifice being limited by a rim that is thicker than the thickness of the window~~ formed by a tubular portion of the glass body, and

heating the ~~rim~~ tubular portion from the exterior at least twice in such a way that the glass in the vicinity of the ~~rim~~ tubular portion melts, creating a fused joint between the window at its rim and the ~~rim~~ tubular portion, and

wherein the window is positioned in the tubular portion such that a portion of the tubular portion projects outwardly beyond an outer face of the window to accommodate an axially outer portion of the fused joint that projects outwardly beyond the outer face of the glass window.

11. (currently amended) A method according to claim 10, in which the rim of the window is ground prior to insertion and prior to fusion with the ~~rim of the orifice~~ tubular portion of the glass body.

12. (previously presented) A method of using a sample cell according to claim 1, comprising passing a gas through the sample cell at pressures of at least 10 bar.

13. (currently amended) A sample cell according to claim 1, wherein ~~the external diameter of the glass body is~~ has an external diameter between 35 and 40 millimetres.

14. (currently amended) A method according to claim 11, wherein the rim an interior surface of the tubular portion is ground cylindrically and is then cleaned with an acid.

15. (previously presented) A method according to claim 14, wherein the acid is hydrofluoric acid.